Designing Craft Research: Joining Emotion and Knowledge

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Abstract

This paper considers how both craft and research can be joined in the enterprise of craft research. The rationale is that craft research is still relatively new compared to mainstream design research and craft being linked to the creation of artefacts as a source of experience and emotion, craft is not usually associated with research and the production of knowledge.

The paper discusses the emerging need for creative research in the crafts based on sensibilities of material understanding and human values, which contrast with the current strictures of research. Drawing on current models of design research and knowledge, the paper proposes experiential knowledge as the unifying conceptual underpinning of both. The outcome and contribution of the paper is a better understanding of the relationship of craft and research, and of the value of research for advancing craft as a discipline that is viable and relevant for the future.

Keywords: craft research, experience, emotion, knowledge, material understanding, human values

The Need for Research in the Crafts

[tx]This paper investigates how research and craft can join in the enterprise of *craft research* to advance craft as a discipline that makes a valuable contribution to future living. The rationale for this investigation is that craft research – that is research into, for and through craft practice (Frayling, 1993) – is still relatively underdeveloped

compared to mainstream design research. Further, in the 20th and 21st century, craft has been generally linked to the creation of artefacts as a source of experience and emotion while research is associated with the production of knowledge (Niedderer, 2009).

The paper traces the context of craft as a contemporary discipline and activity which is bound to the sensibilities of material understanding, of making and haptic perception as well as the production of emotional values found in human relationships and personal identity. It introduces the emerging need for creative research in the crafts and contrasts it with the current strictures of research by exposing the tensions between traditional perceptions of craft and research.

The paper examines the underpinning knowledge of both craft and research and – adopting a Spinozaen position of the unity of body and mind – proposes that experiential knowledge is intrinsic to both, that it can help overcome the differences in the perceptions of craft and research, and that it can serve to integrate investigative practice and theory in order to harness the potential and rigour of research for the development of craft.

The outcome and contribution of this investigation is to establish a better understanding of the relationship of craft and research. It explains the potential and value of research for the advancement of craft, both as a practice and discipline that is viable and relevant for the future.

Perceptions of Craft

This section discusses the perception of craft as a discipline and practice, and how it is distinct from art and design through its reliance on the sensibilities of material understanding, on making and haptic perception as well as through its reflection on, and production of emotional values found in human interaction and relationships.[1]

Craft between Art and Design

The term 'craft' seems to be one of the most debated terms in the art and design world in the 20th and 21st centuries, which is nearly always defined by *what it is not* rather than by what it is. On the one hand, craft is widely regarded as a discipline of its own, as a mode of education or more generally as a paradigm of working (Dormer, 1997: 18; Greenhalgh, 1997: 21; Risatti, 2007). On the other hand, craft has proven elusive, especially when trying to grasp its essence (Greenhalgh, 2002).

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Sennett reiterates how modern society has suffered from craft's historical inheritance and the fault lines that have been drawn between: 'practice and theory, technique and expression, craftsman and artist, maker and user' (Sennett, 2008: 11).

The dichotomy between craft as a discipline or category, and the crafts as a diverse array of practices and positions has persisted for some time (Greenhalgh, 2002: 1). Greenhalgh identifies the crafts as an 'unstable compound' because 'the word is used to collectively describe genres and ideas that formerly were not grouped together and that grew from quite different circumstances' (Greenhalgh, 1997: 21) while, elsewhere, he describes craft as a class, or even empire, of the late modern period, which sits alongside art and design, and which has 'never been in a healthier condition...poised for a radical new phase' (Greenhalgh, 2002: 16). The shift between these two positions is telling, because it is well established that factors which defy definition such as variety and uncertainty can facilitate change, development and growth (Udall, 1999: 204–211). In contrast, classification provides certainty and helps us to grasp concepts, and in this context, craft is usually seen as a third category besides art and design (Greenhalgh, 1997: 40; Niedderer, 2005: 45; Risatti, 2007). The comparison with art and design, however, raises certain issues because craft has first to be defined, which – as we have just seen – is problematic.

In order to define craft as a category, it has been analysed from different perspectives such as aesthetics, expression, function, technology, skill, quality, domesticity, amateurism, museology, sociology and several more (Adamson, 2007; Crawford, 2009; Greenhalgh, 2002: 4; Niedderer, 2005: 45; Risatti, 2007; Sennett, 2008). Many of these perspectives are shared by definitions and theories of art and design. For example, Carroll identifies aesthetic, expression and the institutional theory of art as three prominent theories by which to define art, and craft could certainly be defined by each of these (Carroll, 1999). In the same way, Simon's definition that 'everyone designs who devises courses of action aimed at changing existing situations into preferred ones' can be seen to apply to craft (Simon: 1969: 55).

Depending on which parameters are chosen for the analysis, craft appears to fluctuate on a continuum between art and design. When compared to art, however, craft is often perceived as inferior in status, either subject to its economic value (Greenhalgh, 2002: 6) or subject to assertions of lack of intellectual activity assuming craft as an activity of making that is devoid of conceptual aims (Dormer, 1997: 19).

Thus, it is often simply regarded as supplemental (Adamson, 2007: 11). Equally, when compared to design, craft can be perceived as an inferior practice of design which cannot compete in terms of the use of technology, mass-production, related economic value and possible functionality. Given the above analysis, one might ask 'what then is the unique strength of craft?' We address this question in the following section to develop a better understanding of craft and its value.

Craft, Experience and Emotion

[tx]Risatti, who compares craft to both art and design in turn, summarizes 'craft's unique qualities as functionality combined with an ability to express human values that transcend temporal, spatial and social boundaries' (Risatti, 2007: cover sleeve). This affirms and extends Margetts' earlier understanding of craft as a 'free radical spirit which [...] gives the work and its makers their remarkable quality' (Margetts, 1991: 8) as well as Britton's view that the 'value of the crafts exists in their refusal to be completely one thing or another' and in their ability for 'subtle subversions of our expectations' (Britton, 1991: 15). The remarkable quality of craft expressed in these statements seems to emanate from the material qualities and sensitivity of craft objects, and how makers and owners of craft objects imbue them with personal emotions, memories and meanings that can be perceived as related to the idea of the shared gift (Cummings and Lewandowska, 2001). Sennett underpins the social value of craft, arguing that the act of 'making physical things provides insights into the techniques of experience that can shape our dealings with others' (Sennett, 2008: 289). The aspect of emotion is central to most makers' practice, but is rarely discussed in the context of craft and is often a private, intuitive part of the creative process (e.g. Lacey, 2009). Emotions are more often discussed in the context of design (e.g. Desmet and Hekkert, 2002; Norman, 2005) where they are considered in relation to user experience and attachment. Research in organizational management and planning, psychology and education (Hoch, 2006; Kolb, 1984; Kort and Reilly, 2002) has shown that, if trained, we have a fine discrimination of emotions; that learning is related to emotional states and can be improved or hindered through positive or negative emotions respectively; and that emotion is used by practitioners to make planning judgements in their everyday practice (Hoch, 2006).

[txt]This literature provides useful insights with regard to emotion, except that clear distinctions are not always made between emotion and experience. Experience as a

noun relates to sensory perception (Grayling, 2003: 38ff) and observation, and emotion relates to feeling and affection (OED, 2010), while experience as a verb can also refer to feeling. In spite of a certain overlap, it is still important to distinguish between them. Therefore this paper adheres to definitions of *experience* as 'the actual observation of facts or events, considered as a source of knowledge' (OED, 2010), and of *emotion* as the personal and individual response to an experience, e.g. joy or anger, indifference or boredom, surprise or fear etc. which 'helps humans respond to survival-related problems and opportunities' (Keltner and Ekman, 2000: 163).

More recently, funding bodies have begun to recognize the significance of emotion within craft, by encouraging makers to document and discuss the aspect of emotion in relation to their practice. Nithikul Nimkulrat's series of conceptual garment forms: *Let Go*, *Get Sorted* and *Breath Easily* (2005) emphasize the expressive potential of materials (Nimkulrat, 2010: 71). Created through the manipulation of paper string, Nimkulrat found that when hand knotting a particular quality of untwined string, the pulling action could break it. This discovery changed her understanding of the 'materiality of the material', its hidden fragility and visible coarseness influencing her thoughts and shaping her interpretation (and the title) of the piece *Get Sorted* (Nimkulrat, 2010: 69). She reflected that the feeling of the broken strings and coarse texture led to the association with an earlier experience of something else – in this case barbed wire. Shown in Figures 1 and 2, the piece exemplifies how:

> Forcefully pulling the strings to break them became the manipulation that made the materials qualities visible as the key feature of the work. As Merleau- Ponty ([1962] 2005: 369) stated, 'a tactile phenomenon is effective when it finds something similar within the person who touches' [and]...how the tactile experience gained through the craft artist's hand can seek connection with consciousness and evoke a memory of prior experiences. (Nimkulrat, 2010: 69)
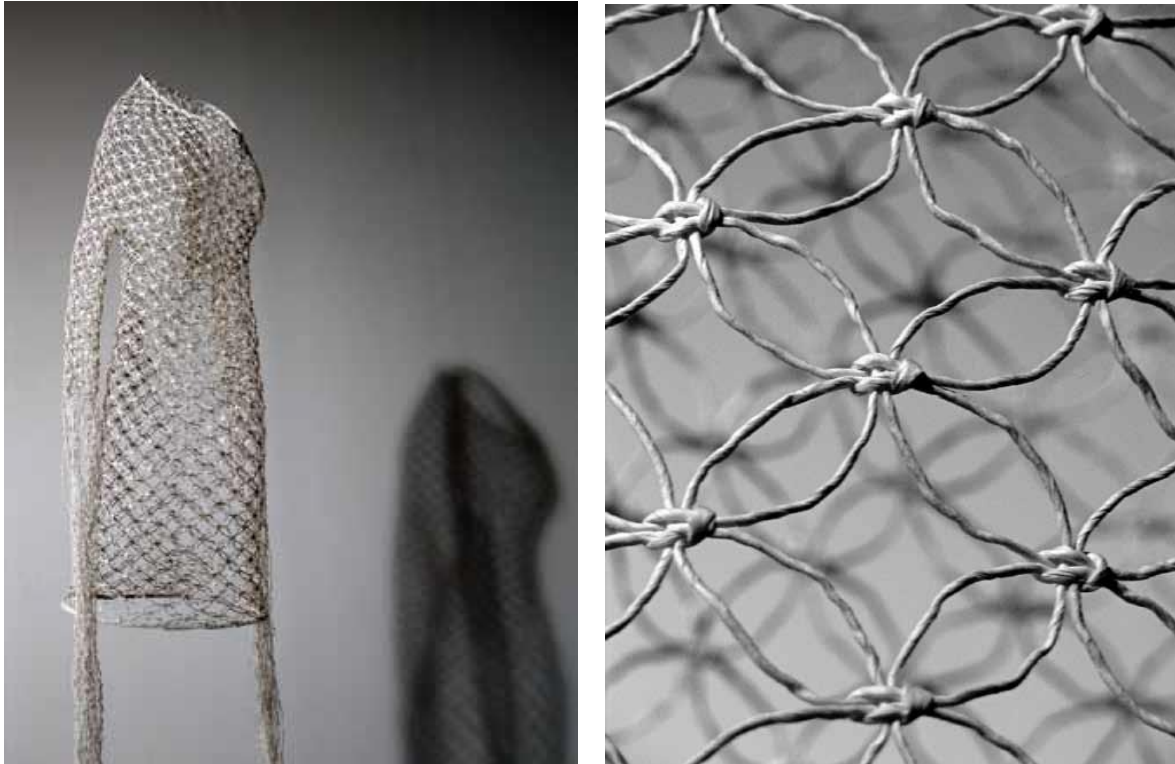
Figures 1 & 2: *Nithikul Nimkulrat (2005). Get Sorted (and close-up section) hand manipulated and knotted paper string. Photograph Maj Lundell © Nithikul Nimkulrat.*

In the exhibition *Lost in Lace*, curated by Lesley Millar, Suzumi Noda's hanging installation, *Juxtaposition* (2011), shown in Figure 3, was inspired by how lace is made of holes 'which allow the wind to pass through, [so] that thinking and feeling become more flexible' (Noda in Millar, 2011: 84). Noda handcrafted the piece by rethreading jacquard punch cards to create a vertical, semi-transparent panel, secured and surfaced with knitting thread and lacquer. The piece was designed to swing physically in space and to move metaphorically between 'the computerized mass production of today and the olden days in which lifestyle goods were created through handcrafts' (Noda in Millar, 2011: 84). Noda's work suggests the connection of observation, experience and emotion shared with the viewer.

In *Textural Space* (2001), also curated by Millar, Chika Ohgi sought to capture the emotions and sensations experienced in nature in *Walking around the Lake* and *Water Pillar*. The haptic quality of Ohgi's textiles is achieved by incorporating the viewer physically within the piece because the scale of the work extends beyond human visual periphery, encouraging them to become part of the work (Millar, 2001). Gale and Kaur consider that the sheer physicality of such pieces 'tends to defer a language based reading of the work, instead drawing on an emotional, spiritual or

dramatic repertoire likely to inspire such feelings as awe and peace' (Gale and Kaur, 2002: 84). Junichi Arai's work provides another good example here, his work in the exhibition *Metallic Sound* prompting 'an intake of breath' as visitors walked into a gallery space filled with lengths of cloth burnished with gold, silver, bronze and titanium to convey elements found in nature (Townsend, 2010).
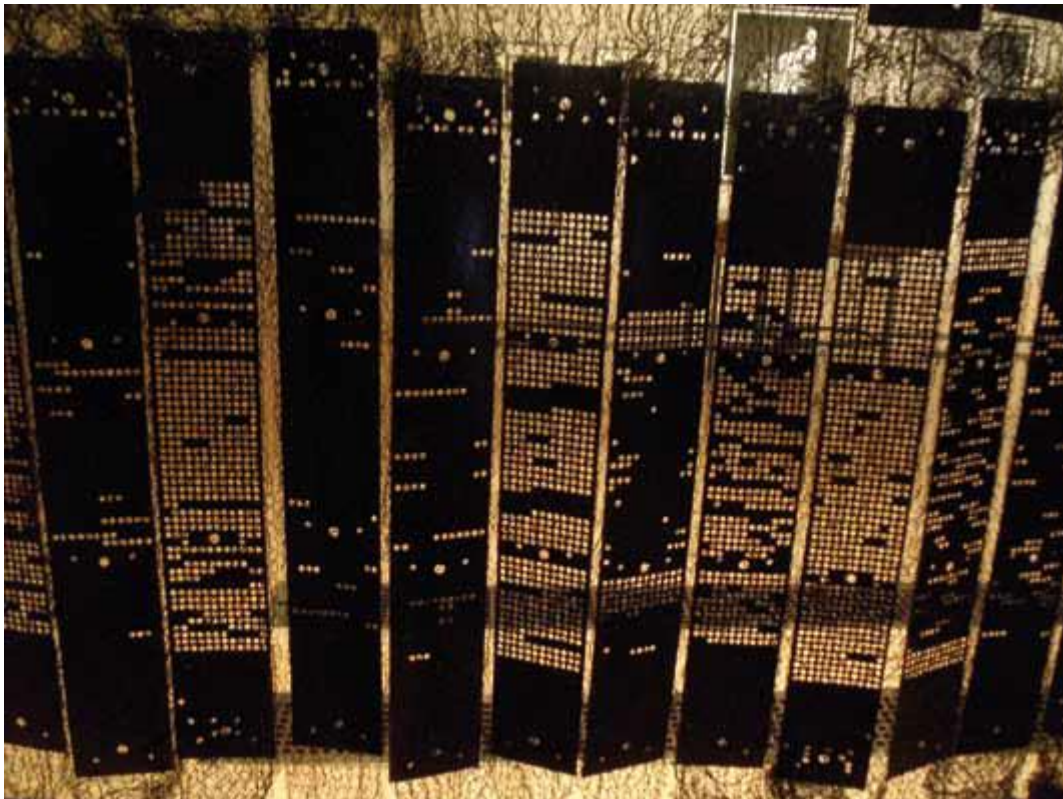

Figure 3: *Suzumi Noda (2011). Section of Juxtaposition, jacquard punch cards, lacquer, plastic fibre, thread and wood, 3.0 x 4.0 metres. Photograph Katherine Townsend.*

In this debate, two significant themes emerge. First, the aspect of human values as related to the intimacy or ambience of the craft object plays an important role. Although craft today is often exhibited in galleries and thus removed from immediate touch, its value seems to rest in the intimacy of handling and its multisensory appeal including visual appearance, sound, touch, smell and taste. Indeed, intimacy may be seen to evade either art or design because the former is traditionally offered for visual consumption only and the latter tends to be anonymous through mass-production. However, with the advent of new technologies, mass-customization is becoming increasingly available, potentially competing with prerogatives of craft, such as the 'Unikat' (a unique piece, or small batch production up to the number of

twelve, dependent on the legislation of individual countries). This brings the second aspect to the fore, which is craft's unique position to experiment and subvert. Its ability to combine function and expression liberally (art could be said to be excluded by definition from drawing on practical function whereas on the whole design has to perform practical function to be viable) and to use them together to create subtle subversions of human values is what makes craft unique.

In summary, while craft may be difficult to define as a category or discipline, a more detailed analysis has revealed that, as a practice, craft displays some important characteristics which distinguish it and which allow it to shake off the image of inferiority as well as to maintain its integrity in the face of new (technological) developments. The essential characteristics of craft are its intimacy and affinity to human values and emotion, and the ability to experiment and subvert. These characteristics define craft and contribute to its intrinsic value.

Developing Craft through Practice-led Research

[tx]Above, we have discussed that the intimacy and affinity with human values and emotion, and the ability to experiment and subvert can be seen as the essential characteristics and strength of craft. To maintain its integrity in the face of new developments, craft practitioners have for some time begun to search for new ways in which to develop their work in order to remain at the forefront of their discipline, and to be able to compete with or take advantage of new technological and cultural developments such as rapid prototyping, rapid manufacturing and mass-customization. In this endeavour, research has become an increasingly important tool for craft practitioners, albeit the apparent disparities between craft and research have made the progress of craft research slow and at times a challenge.

[txt]Research first became formally available to art and design (and craft) in the academy with the integration of vocational colleges into universities in the UK in 1992 (Durling *et al*, 2002). This introduction has resulted in both benefits and challenges. On the one hand, the availability of financial support for research in the UK since 1992 through the Research Assessment Exercise (RAE) and the Arts and Humanities Council (AHRC) has within only two decades turned art and design into a sector where research is thriving, as evidenced by the growing financial health and strong research activity in the art and design sector (RAE, 2009a,b). On the other hand, rules and regulations, which have been developed to suit traditional science-

and humanities-based subjects, have caused debates and challenges (Ball, 2012: 400, Niedderer and Roworth-Stokes, 2007).

Due to this legacy, the most common research in relation to craft has been, and still is, that of historical research and of other traditional disciplines such as archaeology or anthropology. This predominance of historical and archaeological inquiry is exemplified sharply by the figures for PhD Block Grant numbers by the Arts and Humanities Research Council 2009-13 (AHRC 2013):

> History of Art, Architecture and Design: **205**
>
> Archaeology: **174**
>
> Fine Art: **35**
>
> Design: **11**
>
> Applied Arts and Crafts: **5**
>
> (Before 2009, craft did not receive any studentships from the AHRC.)

The total figures for art, craft and design only equates to a quarter of the PhDs studied in History of Art, Architecture and Design, with similar numbers for Archaeology. However, historical research – by its definition – will make first and foremost a contribution to the knowledge of (craft) history, and archaeological or anthropological research to the knowledge base of their respective disciplines.

In order to address the problems that craft practitioners face in their practice, craft research has to address the manifold problems and opportunities encountered in professional craft practice. These may be issues of a technical nature related to technological advances, sustainability or material properties; or methodological concerns with making to provide insights into different models of practice; or questions regarding the formal and functional aesthetic of craft; the expression and meaning of human values and emotion, or the economic, ecologic or social viability of craft, to name but a few.

Focus on these areas of craft research has begun to emerge over the last two decades. For example, digital technology, including 2D and 3D modelling software, CAD/CAM and rapid prototyping, have influenced the ways craft practice has developed. In *Abstracting Craft*, Malcolm McCullough investigated the possibility of 'craft in the digital realm' and suggested a growing correspondence between digital and traditional media, whilst supporting the case for 'upholding human traits and

values' (McCullough, 1998). Issues arising in human-computer interaction and the development of holistic, intuitive strategies have been researched further by craft practitioners undertaking practice-led PhDs. The synthesis of traditional and digital crafting approaches has resulted in hybrid practices that have advanced all fields of craft including ceramics (Bunnell, 1998; Marshall, 1999), textiles (Harris, 2000; Townsend, 2004), glass (Cutler, 2006), and metalwork and jewellery (Dean, Unver, Campbell and De Beer, 2012; Masterton, 2007; Wallace, 2007). Consequently, craft practitioners are acutely aware that digital applications are not a solution in their own right, but add to the spectrum of technology on offer to the maker (Harris, 2012). In 'Deconstructing the digital', Masterton explored the development of digital crafting approaches and the importance for craft makers to find ways in which they can gain greater control over the digital processes and tools they use (Masterton, 2007). Treadaway reinforces the maker's dilemma of balancing manual and digital ways of working, and highlights the need to retain tacit, tactile knowledge of materials and processes that cannot be adequately simulated through digital platforms (Treadaway, 2009).

It is this need to retain tactile knowledge and intuition in the understanding of materials and processes, as well as aesthetic, emotional and cultural issues, which has made the relationship of craft and research problematic. This intuition is gained through extensive experience of working with materials and processes. It enables craft practitioners to acquire knowledge and skills that are based on experiences, that are largely tacit, that are the basis of expertise and connoisseurship (Berliner, 1994: 110; Dreyfus and Dreyfus, 1988: 16ff; Niedderer, 2007b), and that can never be fully communicated because 'we can know more than we can tell' (Polanyi, 1967: 4). Being largely tacit, craft knowledge (experiential/procedural) is often perceived to be at odds with the traditional understanding of research and its contribution to knowledge, which requires explicit evidence and justification to be perceived as rigorous.

This split between experience-based, pragmatic knowledge and 'rigorous scientific knowledge' goes as far back as the enlightenment (1650-– when the modern understanding of knowledge emerged (Ball, 2012). In particular, it was fuelled by the philosophy of Descartes, which postulates the separation of body and mind, and which is still prevailing (Ball, 2012: 135, 400). As a consequence of the Cartesian and other contemporary approaches, research developed a distrust of the senses, of

personal experiences and emotions (Ball, 2012: 222; Newman, 2010; Nadler, 2013), leading to requirements for a dispassionate observer (Ball, 2012: 52), explicit theorisation and repeatability (Ball, 2012: 402; Israel, 2002: 252).

The Strictures of Research

[tx]It is important to examine this prevailing notion of research in more detail in order to understand why, both in theoretical and in practical terms, it can appear at odds with the understanding of knowledge and expertise in the crafts. Today, most research regulations, especially those for PhDs, require a 'contribution to knowledge' and also prescribe a set of requirements of how this contribution is to be communicated (e.g. AHRC, 2008: 24; RAE, 2005; as well as many university research definitions worldwide e.g. Curtin University of Technology, 2001: 1, 2; Indiana University Southeast, 2005: 19, 50). The position of knowledge, which is implicit in research through these regulations and requirements, prioritizes what is known as propositional knowledge (Niedderer, 2007a). The concept of propositional knowledge is defined as 'justified true belief' (Grayling, 2003: 37) and is characterized by the 'proposition' or 'thesis' ('true belief') on the one hand, and the 'justification' through adequate evidence on the other. Although in 1963 Gettier raised objections against this definition of propositional knowledge, claiming that a fourth as yet unknown condition is required to provide the causal link between the 'true belief' and its 'justification' or, alternatively, a completely new definition of knowledge Hospers (Hospers, 1990; see also Grayling, 2003), this understanding of knowledge has persisted. Traditionally, the need for explicit justification requires all parts, and thus knowledge, to be explicit and generalizable (Niedderer, 2007a).

[txt]Experiential or tacit knowledge (also: non-propositional knowledge) in contrast is regarded as knowledge derived from experience, although there are variations (Niedderer, 2007a; Grayling, 2003: 38ff). Experiential knowledge is perceived to be important for art, craft and design, because it can provide data, verify theoretical conjectures or observations etc. within a theoretical framework. While experiential knowledge can be described, some part of it evades communication and remains tacit. It is therefore also termed 'tacit knowledge'. Because of its (partly) tacit nature, experiential knowledge does not easily yield to practices of justification and evidence traditionally used in research (Ball, 2012: 400; Niedderer, 2007b; Williams, 2001: 98).

The justification of propositional knowledge can take two forms based on two positions: the first position assumes that all reality emerges from human consciousness and therefore that all knowledge is normative. This leads to the assumption that there is no outer reality to refer to and any argument must therefore be internally coherent. This position is called Coherentism (Williams, 2001: 117ff; see also Newman, 2010; Klein, 2005). The second position assumes knowledge to be 'out there', independently of the researcher, and that knowledge therefore has to be gained by reference to evidence from the external word. This position is called Foundationalism (Williams, 2001: 81ff; Klein, 2005). In negotiation of these two positions, Williams (2001: 159–172) proposes a third approach, which he calls Contextualism, which assumes that we can rely on our experience of external reality until we have reason to challenge it (default and challenge requirement). As it is context-dependent, this approach allows researchers to assume certain beliefs as foundational beliefs. However, they may be open to scrutiny if the context changes, using a normative argument where necessary, but without the necessary circularity of Coherentism. Williams argues that this approach is permissible because of the normativity of knowledge, which is not an a priori given, but is itself a human construct. Williams' approach can be understood to postulate a Spinozean notion of knowledge, which assumes the unity of body and mind (Israel, 2002: 230–243, 252), and thus to overcome the Cartesian dichotomy of matter and thought, reason and experience, and instead integrate both to gain a more holistic worldview. We argue that this holistic understanding of knowledge is required to enable craft research successfully.

The particular understanding of knowledge in research is related to a particular understanding of research conduct, termed 'rigour'. The idea of rigour in research has developed to achieve equity in terms of research conduct and quality across different disciplines and projects. Rigour is understood as intrinsic logic or causality embodied through 'the chain of reasoning' (Gorard, 2002; see also Freeman and Neely, 1990; Millo *et al*, 1979). Rigour has at times been disputed as a criterion of the empirical sciences. However, in line with a Spinozean understanding, Tobin and Begley argue that rigour is a criterion that transcends individual paradigms:

Rigour is the means by which we demonstrate integrity and competence (Aroni *et al*, 1999), a way of demonstrating the legitimacy of the research process.

Without rigour, there is a danger that research may become fictional journalism, worthless as contributing to knowledge (Morse *et al*, 2002). However, in response to Morse's caution, we suggest that qualitative researchers are not rejecting the concept of rigour, but are placing it within the epistemology of their work and making it more appropriate to their. (Tobin and Begley, 2004: 390).

In this sense the notion of rigour can pertain to both scientific and philosophical, positivist and constructivist, quantitative as well as qualitative study. Its parameters will vary dependent on the paradigm of study (Guba, 1990; Hamberg *et al*, 1994; Tobin and Begley, 2004). While traditionally the parameters of rigour are validity, reliability, objectivity and generalization, for qualitative research they may be reinterpreted as credibility, dependability, confirmability and transferability (Hamberg *et al*, 1994: 178). Thus the paradigm determines which knowledge framework is employed in general, while rigour offers tangible criteria for linking methods and knowledge. A Spinozean holistic understanding of knowledge and, by extension, Tobin and Begley's understanding of rigour seems to hold the key for integrating and communicating experiential and propositional knowledge for the purpose of research.

Craft Knowledge within Research

[tx]We can now begin to understand how craft knowledge relates to propositional knowledge, justification and the criteria of rigour in research. The proposition we are making is that craft knowledge – in line with a Spinozean approach – is based on both experiential and propositional knowledge. For example, in making a piece of work any craftsperson will draw on propositional knowledge, such as the knowledge of material structures, melting points, ductility or chemical composition etc., and which tends to be expressed (alpha-)numerically. While this knowledge is important, it is not sufficient on its own to understand the maker's knowledge utilized in the craft process. Experiential knowledge is necessary in addition to enable the successful interpretation, manipulation and judgements required for working with any particular material or process.

Essentially, there are two ways of dealing with experiential knowledge pragmatically within the conduct and justification of research. There is a simple answer to understanding and integrating experiential/tacit knowledge within research. If we understand experience as 'the actual observation of facts or events, considered as a

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source of knowledge' (OED, 2010), experience can be recorded and used as evidence for propositional knowledge. This is very much in the sense of (qualitative) empirical science.

However, there is a more complex response, which seems closer to reality: although some part of experiential knowledge can be recorded through description, there is another part of experiential knowledge, which remains tacit and therefore elusive (Polanyi, 1967: 4). This tacit knowledge generally allows a fine discrimination of experience, both in terms of perception and emotion, which for example is pertinent in the observation, expression and understanding of music where it needs the expert's trained eye to observe the gestures with which musicians communicate during performance. Similarly, this seems to be true for the making and comprehension of craft, hence the emphasis of expertise and connoisseurship mentioned above which includes aesthetic judgement and taste.

The question is then, how research can take account of experiential/emotional values and the intuitive/emotional judgements made based on (personal) experience. If one follows Spinoza's idea of the unity of body and mind, which proposes that perceptual knowledge is organized through reason, and that intuition 'takes what is known by Reason and grasps it in a single act of the mind' (Nadler, 2013), research needs to integrate these three elements in that data (sensory perception, experience) require interpretation through reason and intuition to reveal the knowledge contained in them (Ball, 2012: 396; Israel 2002: 252).

To achieve this in practical terms, experiential knowledge can (partly) be captured through description. This description can be used to compare the parameters of experiential and/or emotion-based judgements. Where a comparison is made on an experiential basis, it may not be 'objective' in the sense of being quantifiable, but it may be confirmable. For example, one can compare the coefficients of ductility of silver objectively, but this means little in actual workshop practice unless it is supported by experience of how ductile and/or flexible one silver alloy is in comparison to another and what this means in terms of its actual use (Niedderer, 2006), i.e. whether the metal flexes or breaks. In such a situation, any decisions about which and how to use any particular material will be made on the basis of this experiential knowledge, rather than on the basis of impersonal, objective scientific knowledge, although the latter may underpin practical knowledge.

The importance of experiential and emotional perception is also confirmed in other fields of study. For example, Hoch (2006: 367) explains that 'social psychological research studies the effects of cognitive emotional interaction on planning judgment' and that to 'combine cognitive and emotional ideas about planning' will help to understand 'the kind of planning judgments practitioners make in their everyday practice.' Further in organizational context, Mumby and Putnam (1992) provide a similar example for the reliance on emotional knowledge, which seems transferable to the crafts. They explain that:

> We advocate recognition of the knowledge-producing dimension of emotion (Jaggar, 1989). This view runs counter to common-sense notions that contrast emotion with reason and exclude emotion from knowledge construction. Emotion and knowledge typically appear as antithetical terms. In contrast, we suggest that emotions ground legitimate rational responses to organizational behaviour. Emotions constitute a way of knowing that differs from but complements traditional rationality. This concept of emotion stems from the belief that social actors seek mutual understanding and a communication community characterized by solidarity, mutual dependence, and ethical behaviour (Rorty, 1989). This orientation is not merely cognitive or instrumental, but it is comprised of sentiments about what is good, right, and possible. Thus, for example, understanding feelings about what constitutes ethically correct decisions is just as significant as analyzing the organizational procedures that lead to decision outcomes. (Mumby and Putnam, 1992: 480)

This observation explains why there is a need to integrate knowledge gained from experience and emotion into current models of research. In practice, most of these decisions will be made tacitly and remain tacit. In research, the minimum may be to acknowledge, describe and document its use through text and visual evidence, and to explain the competence employed as well as the consequences of doing so. The benefit is that in this way knowledge from experience can be shared and discussed to improve it. Processes to capture craft knowledge have been researched by Wood *et al* (2009). In the following, we discuss three examples from craft to illustrate both the use of and need for research and its acknowledgment of experiential and emotional knowledge to advance craft thinking and practice.

The first example is by Catherine Harper who invokes the following scenario asking the reader to trace the web of connections between contemporary technological textile developments, personal narratives, handcrafted textile artefacts, material and theoretical practice:

> Imagine a bed that pulls back its quilt for you and your lover, remembers how you both curve together, adjusts to cool or warm you, and forms the hollows in your pillows to cradle your heads... With programmable fibres and responsive Bluetooth (wireless) technology, as used for example by Tomoko Hayashi in her Intimacy Across Distances project (2004), this level of automatic and magical material response becomes a design possibility rather than a future-science dream... (Harper, 2005: 85)

Here, Harper invokes emotion and imagination as a tool for conjecturing future scenarios as a starting point for new design developments that may expand the traditional understanding of handcrafted textile artefacts.

The second example references the work of Jane Wallace, whose PhD thesis 'Emotionally charged' (Wallace, 2007) was a practice-led enquiry into digital jewellery and its personal, emotional significance. Wallace's *Personhood in Dementia* (2009) focused on 'the importance of objects to...help maintain memory and identity, and development methods that connect the past to present day scenarios and people' (Harris, 2012: 100). The series included *Dress Brooch* and *Dress Box* (2009) made for, and in collaboration with, Gillian, a woman in the early stages of dementia and her partner John. On John's suggestion Wallace selected remnants of fabrics from dresses Gillian had made in the 1960s and 1970s, which naturally triggered memories shared from this time. Crafted in wood veneer, in the shape of a dress, the brooch clips to the fabrics like an embroidery hoop and a radio-frequency identification (RFID) tag links the brooch to a sensor in the 'Dress Box' activating recorded conversations and songs. Wallace's pieces invoke the 'human-relational richness' of traditional jewellery while exploring the potential and value of digital aesthetics:

> Within my approach is a recognition that the sense of making is important; the sensitivities within craft are more than the physical sense of making; the

empathetic and emotional sensibilities in craft practice enable it to be a significant force when designing and making objects that operate in an emotionally significant way for individuals. (Wallace, 2011)

Figures 4 & 5: *Jayne Wallace (2009). Dress Brooch, from Personhood in Dementia series, vintage dress fabrics and wood; Jayne Wallace (2009). Dress Box, walnut, velvet, RFID reader, microphone and speakers, made in collaboration with James Thomas and Dr Karim Ladha. Photographer David Green © Jayne Wallace.*

The final example presents practice by the ceramicist Michael Eden for whom research has opened the door to experimental freedom. Following two decades as a traditional ceramicist, Eden has spent recent years experimenting with digital technologies, 3D modelling software and producing objects using rapid prototyping. His research at the Royal College of Art and then subsequently as a Digital Research Fellow with MIRIAD at Manchester School of Art has allowed Eden to develop exceptional intricacy and to explore new material processes. As a ceramicist, this research frees him from the constraints of traditional material properties and approaches as illustrated by *Vortex* in Figure 6, which digitally emulates the coiled pot construction technique while defying the laws of gravity. Eden's embracing of digital technology is not in opposition to more traditional processes, but it has enabled him to develop a new methodology and outcomes that embody the freedom of working between and beyond preconceived boundaries. He states:

What I'm looking at now is perhaps a different creative language, and expressive ideas that are less to do with material processes and more to do with ideas, concepts and stories, using historical and cultural references to promote a debate about craft, art and design. And I'm so very happy to be in this grey area I inhabit, that's not quite craft, not quite art and not quite design. (Lloyd-Jones, 2010: 41)

Figure 6: *Michael Eden (2011). Vortex, made by Additive Manufacturing (AM). Photograph courtesy of Adrian Sassoon © Michael Eden.*

Conclusion

This paper has explored the notion of craft and its intrinsic characteristics in relation to research, including the tensions between the needs and requirements of conducting research in the crafts. The need to develop rigorous research in the crafts is driven by the recognition of its value for the advancement of craft, both as a practice and as a discipline that is viable and relevant for the future. Current themes include material and technological issues centring on the use of new technologies in support of traditional craft practice; methodological concerns seeking to capture ways

of making and to provide insights into different research practice models; and conceptual concerns with the intrinsic values of craft such as its ability to capture and invoke intimacy and emotion.

The analysis of craft shows that the intrinsic characteristics of craft are its affinity with what it is to be human, its ability for the experiential exploration of technology, and the subtle subversion of aesthetic and material conceptions, which determine the inquisitive nature of craft. This role of craft is rooted in its flexible nature as a conduit from design at one end to art at the other. Its characteristics are based on experiential and emotional knowledge, which are an important strength of craft and therefore an integral aspect of any research in the crafts.

The perceived dichotomy between the needs of craft and the traditional requirements of conducting research, and their respective practices, can be overcome when experiential and emotional knowledge are understood and integrated within research in the sense of a Spinozean unity of body and mind. Recognizing experiential and emotional knowledge as agents for intrinsic understanding, interpretation and judgement is key to this because of craft's affinity with human values. Therefore, it is essential to make these values and judgements explicit as part of any research. Used in this way, we believe research has become an essential tool to build the crafts as a vital and viable modern discipline that offers a vision for the sustainable development of human social, economic and ecological issues.

Note

[nt]1. The notion of 'art and design' here follows its common use as a label for UK university creative departments. In this context, the former generically refers to fine art practices and the latter to product, industrial or interior design practices, whereby fine art practices are traditionally based on visual/audio consumption (with some exceptions, of course), and design is characterised by CAD-based functional design for mass-production. Craft (applied arts) tends to be subsumed variably under either of the two portfolios without differentiation.

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